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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/615,487	07/07/2003	Ulrich Kluter	01950/000M699US0	7946

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EXAMINER

NGUYEN, HUNG

ART UNIT	PAPER NUMBER
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2851

DATE MAILED: 07/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/615,487

Applicant(s)

KLUTER, ULRICH

Examiner

Hung Henry V Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 and 13-15 is/are rejected.
- 7) ☒ Claim(s) 10-12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 7/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claim 1, 7-9, 13-15 are rejected under 35 U.S.C. 102(e) as being anticipated by Mei (U.S.Pat. 6,473,237).

With respect to claims 1, and 7-9, Mei (figure 1) discloses an apparatus for producing a projected image on light sensitive material (42) wherein the projected image represents graphic information that is divided into individual pixels and wherein further image is projected in the form of partial images that are laterally offset relative to each other and comprising all basic features of the instant claims such as: a transmissive device (38) for producing the partial image; a light source (32) for generating light rays that pass through the transmissive device; an illumination device for guiding the light rays along a plurality of mutually parallel light paths through the transmissive device and a projection objective (40) for projecting the light rays

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representing the partial images onto the light sensitive material (42) wherein the illumination device bundles the light rays into light beams before they pass through the transmissive device and the projection objective projects onto the light sensitive material (42) only those light rays that run at least approximately parallel to the optical axis of the projection objective.

With respect to claims 13-15, the claimed method is seen to be inherent teachings in view of the existence of the above apparatus.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-9, and 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato (U.S.Pat. 6,717,651) in view of Markle (US 2002/0171816 A1).

With respect to claims 1-2, 5-7, 9 and 13-15, Kato discloses an exposure apparatus and corresponding method comprising substantially all of the limitations of the instant claims including: a light source (1) for providing light rays; a mask (M) having a predetermined pattern; an illumination device (2-13) for guiding the light rays along a plurality of mutually parallel light paths through the reticle, a telecentric projection lens (PL) for projecting the light rays representing the partial images from the reticle onto a light sensitive material (W); at least one adjustable diaphragm as well as an illumination lens arrangement disposed between the light source and the mask and the illumination lens arrangement comprises a condenser lens (see

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figure 12). Kato lacks to show that the mask being “a transmission device”/ a pixel panel having a micro-lens matrix and a black matrix for producing partial images. However, this structure is well known per se. For example, Markle teaches a pixel panel comprises black matrix and micro-lens matrix for producing digital images (50). It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the “transmissive device” as taught by Markle into the exposure apparatus of Kato for at least the purpose of achieve a lithography process without changing conventional masks whereby the operation time and cost can be greatly reduced.

As to claims 3-4, Kato as modified by Markle discloses an exposure apparatus and corresponding method comprising substantially all of the limitations of the instant claims as discussed. Kato as modified by Markle does not expressly disclose that “the projection lens projects onto the light sensitive material only those light rays that are within a maximum aperture angle between $+7^\circ$ and -7° or $+4.7^\circ$ and -4.7° , relative to the optical axis of the telecentric objective”. Kato teaches driver (76) for driving variable aperture stop of the telecentric projection optical system (PL) for adjusting the angular acceptance range of the telecentric projection optical system. In view of such teachings, it would have been obvious to one having ordinary skill in the art at the time the invention was made to select the angular acceptance range of the projection lens as recited in the instant claims for the purpose of increasing the resolution of the images to be printed since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Allowable Subject Matter

5. Claims 10-12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. The following is a statement of reasons for the indication of allowable subject matter: the prior art of record either alone or in combination, neither discloses nor makes obvious the combination of an exposure apparatus for producing a projected image on a light sensitive material comprising among other features, a tiltable first optical offsetting element, as recited in the instant claims of the present invention.

Prior Art Made of Record

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

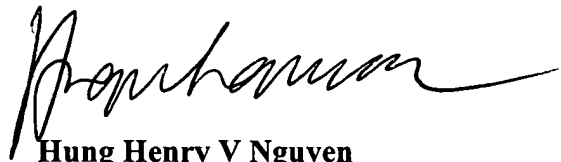
Kanatake et al (U.S.Pat. 6,606,739) and Sandstrom et al (U.S.Pat. 6,624,880) discloses a maskless microlithography system, and Nishi (U.S.Pat. 5,994,006) discloses a projection exposure apparatus, each of which comprises substantially all elements as recited in the instant claims of the present invention.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung Henry V Nguyen whose telephone number is 571-272-2124. The examiner can normally be reached on Monday-Friday (First Friday off).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Russ Adams can be reached on 571-272-2112. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Hung Henry V Nguyen
Primary Examiner
Art Unit 2851

hvn
7/2/04